Floodplain Management 2050
The 2nd Gilbert F. White Flood Policy Forum

Project Foresight Workshop
September 18, 2008
Washington DC

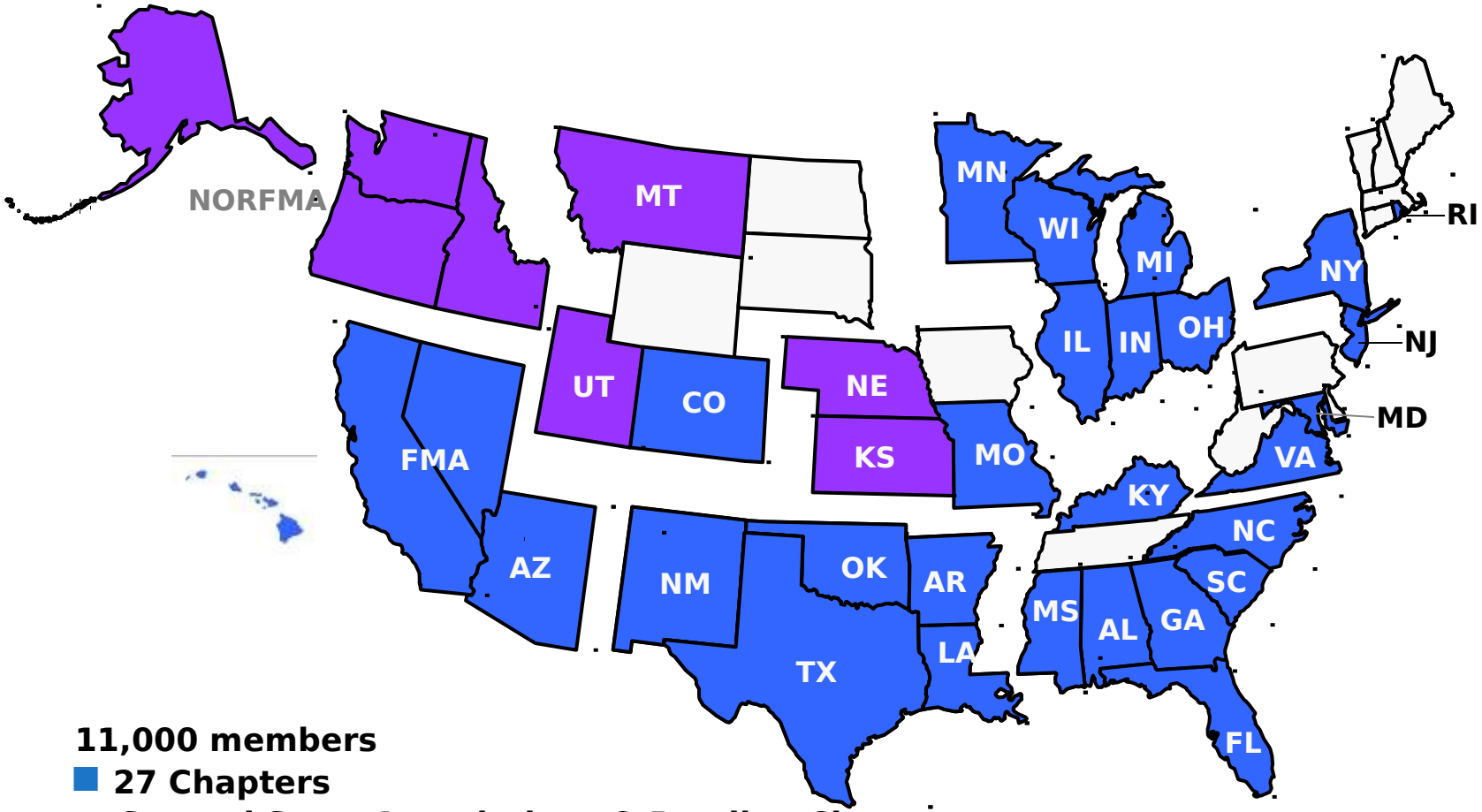
Doug Plasencia, P.E., CFM
ASFPM Foundation Events Chair

Association of State Floodplain Managers

The mission of ASFPM is to promote education, policies, and activities that mitigate current and future losses, costs, and human suffering caused by flooding, and to protect the natural and beneficial functions of floodplains - all without causing adverse impacts.

www.floods.org

Association of State Floodplain Managers
Chapters & Other State FPM Associations

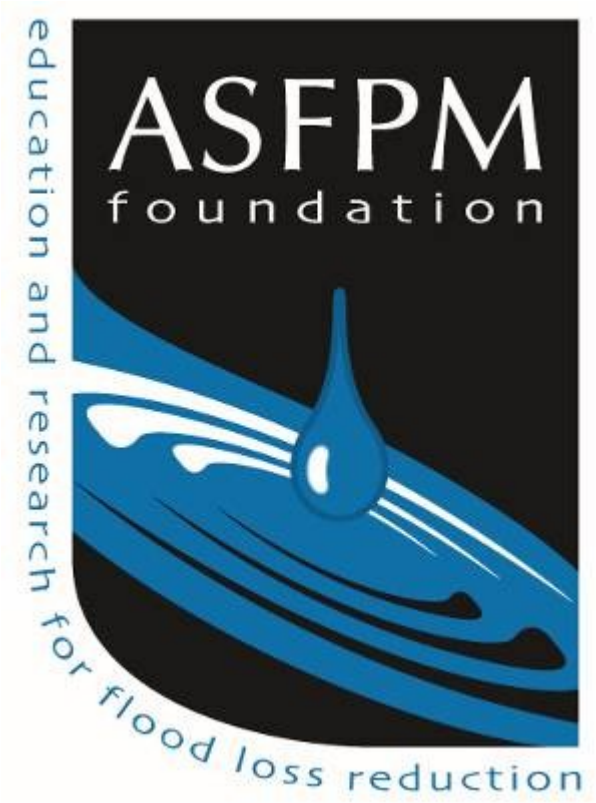


11,000 members

27 Chapters

Several State Associations & Pending Chapters

The ASFPM Foundation



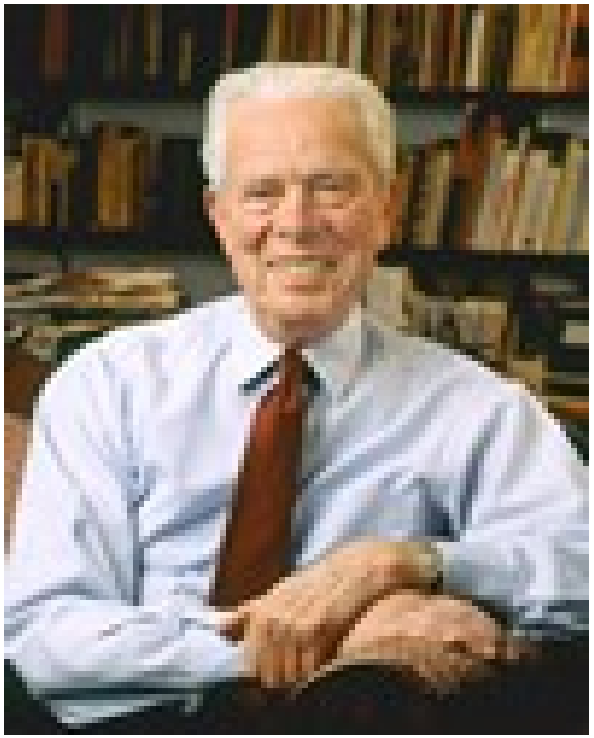
- **Extension of ASFPM**
- **Dedicated to raising funds and supporting education and research for flood loss reduction**
- **Example Efforts**
  - **Flood Forums**
  - **Publications**
  - **CFM Seed Funding**
  - **NAI Initiatives**

Floodplain Management 2050 Sponsors

- **AMEC Earth & Environmental**
- **Black & Veatch**
- **CDM**
- **Dewberry**
- **Greenhorne & O’Mara**
- **H20 Partners**
- **Michael Baker, Jr., Inc.**
- **PBS&J**
- **Reznick Group, P.C.**
- **URS Corporation**
- **Watershed Concepts**
- **The Widgeon Foundation**

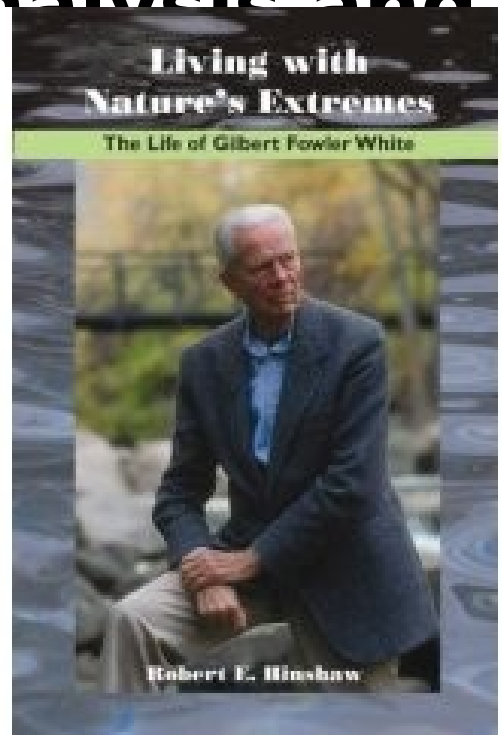
The Gilbert F. White Flood Policy Forum

- **Foundation Signature Event**
- **“…periodic gathering of experts…”**
- **“…national discussion of important floodplain management issues…”**
- **“…named after Gilbert F. White the most influential floodplain management policy expert of the 20th century…”**



The Gilbert F. White Flood Policy Forum

- **“The forums are not only a tribute to his work, but also a recognition of the success of his deliberative approach to policy analysis and research”**



Human Adjustments to Floods (GFW 1942)

White described eight adjustments to flooding

1. Elevation
2. Flood Abatement (watershed mgt)
3. Flood Protection (levees, channels, etc)
4. Emergency Measures
5. Structural Alterations (floodproofing, codes)
6. Land Use (zoning)
7. Relief (public or private)
8. Insurance (indemnification)

Forum Method- Background Papers

- **Participants wrote over 40 papers prior to Forum**
  - **Intro- Human Adjustments to Floods 2050**
  - **Flood Risk 2050**
  - **To Occupy or Not Occupy Land Use**
  - **To Occupy or Not Occupy Natural Resources**
  - **Flood Insurance and Economic Implications**
  - **Delineating/Communicating Flood Risk**
  - **Elevation, Standards, Flood Control**
  - **Vulnerability Reduction**
  - **Improvements to the Mix of**

Forum Assembly

- **92 Participants**
- **Government**
- **Academics**
- **Private Sector**
- **Floodplain**
- **Insurance**
- **Banking**
- **Transportation**
- **Environmental**

Forum Method- Four Introductory Speakers

- **Human Factors in 2050: Population Trends, Growth, and Urbanization**
  - **Dr. Arthur "Chris" Nelson- Virginia Tech**
- **Environmental Factors and Natural Resources in 2050: Climate Change, Ecosystem Degradation, Land Use**
  - **Bill Hooke- American Meteorological Society**
- **Government and other Factors in 2050: Devolution Upwards and Downwards**
  - **G. Tracy Mehan III- The Cadmus Group**
- **Scenario-based Planning to Guide Future Adjustments: The Foresight Flood and Coastal Defence Project of the United Kingdom**

Method- Group Evaluation vs. Adjustments

1. What Challenges to FPM 2050 ?
2. What Adjustments will be used 2050?
3. What Shifts in Policy and Programs 2050?

1. *Elevation*
2. *Flood Abatement (watershed mgt)*
3. *Flood Protection (levees, channels, etc)*
4. *Emergency Measures*
5. *Structural Alterations (floodproofing, codes)*
6. *Land Use (zoning)*
7. *Relief (public or private)*

Part I -The Drivers of Change

Demographic Drivers

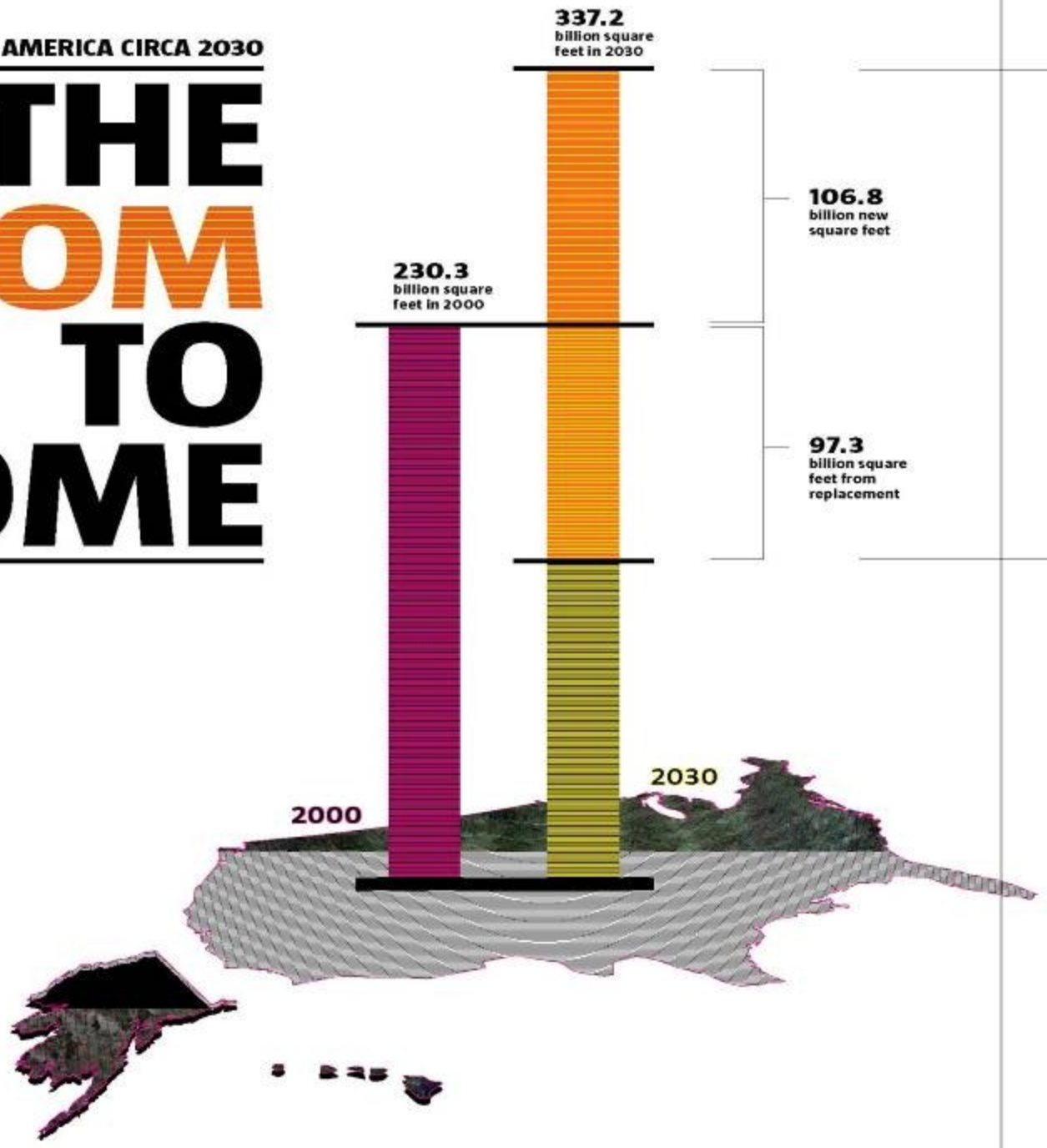
- More People (*population increase of 80 to 100 million in U.S. by 2050*)
- A Pattern of Movement to South and Southwest and New Mega Urban Zones
- A Different Character
  - Two class society
  - New cultures
  - Changing expectations
  - More retired as % of population

Opportunities

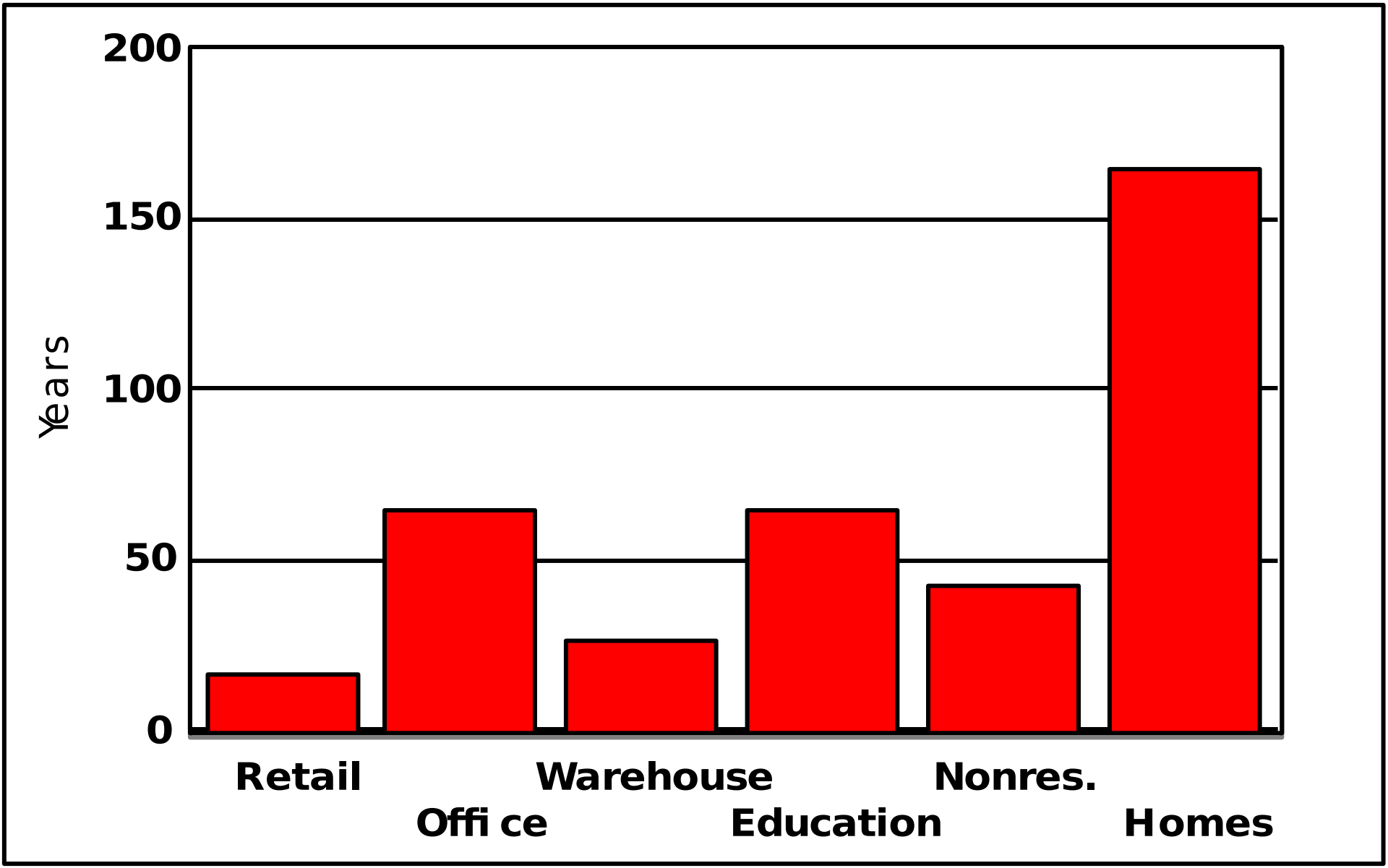
- Development-40% of all building will be new

AMERICA CIRCA 2030

THE BOOM TO COME



Life-Span of Building Space



Governance Drivers

- Devolution to State/Local/Private Levels
- Existing Structure, Laws and Entities Changing
- Changing Relationship between People and their Government
- People expect governments at all levels to do more, yet they shrink from personal responsibility

Governance Drivers

- Governments have more to do, with less money
- “The federal budget of the future could be almost entirely consumed by entitlements and payment on the national debt”

  — *G. Tracy Mehan III, The Cadmus Group*
- “The planet is awash in private capital, but governments are fiscally challenged”

  — *G. Tracy Mehan III, The Cadmus Group*

Environmental, Economic, Technology Drivers

- Natural Resources/Environmental Drivers
  - Loss of natural protective barriers
  - Water development in the past has occurred by trading off natural resources/environment-- tipping balance against environmental equilibrium
  - Climate change
- Economic & Technological Drivers
  - Global economy

Added factors not in play 50 years ago

- Aging and Failing Infrastructure
- Recognition of the Need to Save Open Space
- Interdependencies (e.g. on-time inventories)
- Expectation of Services from Government
- The “Pace of Change”
- Climatic Shifts

Where Will We Be In 2050 If Business-As-Usual Prevails?

- **Forum concluded there is strong potential in the decades between now and 2050**
  - **Increased flood exposure due to increased population**
  - **more frequent (large) flood disasters**
  - **Ecosystem degradation and collapse will worsen**
  - **Quality of life will be diminished**

Where We Could Be In 2050 . . . A safe and stable future is within our grasp

- Land and water (floodplains, wetlands and coastal areas) are restored and provide dual safety/resource functionality
- The market favors sustainable development, so that floodprone construction rarely occurs.
- Development is designed and built for no adverse impact
  - flood levels, sedimentation, erosion, riparian or coastal habitat, other community-designated values.

Additional Adjustment Factors

1. Room for rivers and oceans.

1. *Elevation*
2. *Flood Abatement (watershed mgt)*
3. *Flood Protection (levees, channels, etc)*
4. *Emergency Measures*
5. *Structural Alterations (floodproofing, codes)*
6. *Land Use (zoning)*
7. *Relief (public or private)*

Additional Adjustment Factors

1. Room for rivers and oceans.
2. Personal responsibility

1. *Elevation*
2. *Flood Abatement (watershed mgt)*
3. *Flood Protection (levees, channels, etc)*
4. *Emergency Measures*
5. *Structural Alterations (floodproofing, codes)*
6. *Land Use (zoning)*
7. *Relief (public or private)*

Additional Adjustment Factors

1. Room for rivers and oceans.
2. Personal responsibility
3. Geographic interdependencies

1. *Elevation*
2. *Flood Abatement (watershed mgt)*
3. *Flood Protection (levees, channels, etc)*
4. *Emergency Measures*
5. *Structural Alterations (floodproofing, codes)*
6. *Land Use (zoning)*
7. *Relief (public or private)*

Additional Adjustment Factors

1. Room for rivers and oceans.
2. Personal responsibility
3. Geographic interdependencies
4. Awareness and education

1. *Elevation*
2. *Flood Abatement (watershed mgt)*
3. *Flood Protection (levees, channels, etc)*
4. *Emergency Measures*
5. *Structural Alterations (floodproofing, codes)*
6. *Land Use (zoning)*
7. *Relief (public or private)*

Part IV.—An Agenda for Action

- Make room for rivers, oceans, associated land areas.
- Restore and enhance natural and beneficial functions of riverine and coastal areas.
- Generate a renaissance in water resources governance.
- Reverse perverse incentives in government programs.
- Identify and communicate risk at public and individual levels.
- Encourage personal and public responsibility.

Next Steps of Foundation

- Finalize Forum report (completed)
- Prepare policy oriented materials
- Prepare videos and other outreach materials

Next GFW Forum proposed 2009-2010

- **Risk Management**
  - **Symposia 1- Defining Risk (2009)**
  - **Symposia 2- Mapping and Communicating Risk (2009)**
  - **Forum- Risk management policy (2010)**

Floodplain Management 2050
The 2nd Gilbert F. White Flood Policy Forum

Planning Committee

Doug Plasencia
Diane Brown
Gerry Galloway
Larry Larson
Dale Lehman
Larry Olinger
Pam Pogue
George Riedel
Jackie Monday
Ed Thomas